

**Publication date/time: Sept. 20, 2023 (Wed.) 8:00AM (Japan time)**

September 20, 2023

## **Toyobo MC's BREATHAIR™, a three-dimensional network structured fiber material, used in seatback supporter for "ROV Concept," LEXUS's first vehicle with a hydrogen engine**

BREATHAIR™, a three-dimensional network structured fiber material manufactured and sold by Toyobo MC Corporation (referred to below as "Toyobo MC," Main Office: Kita Ward, Osaka City; President & Representative Director, CEO: Chikao Morishige) has been adopted for the seatback supporter of the vehicle used in the customer experience program\*1 to be launched by Lexus International (referred to below as "LEXUS") for the "ROV\*2 Concept" (referred to below as ROV), LEXUS's first vehicle equipped with a hydrogen engine\*3. This seatback supporter, which is placed in front of the backrest of the seat as needed, will allow more customers to enjoy a pleasant driving experience, thanks to special attention devoted to the driving position in the ROV.

Toyobo MC will pursue enjoyment of vehicles that add flair to outdoor lifestyles while coexisting in harmony with nature, feed back data accumulated through the customer experience program to the process of technology development for future practical application, and meet the challenges of realizing a carbon neutral society.

BREATHAIR™ is a three-dimensional network structured fiber material that uses Toyobo MC's PELPRENE™, a thermoplastic polyester-based elastomer. Stiffness while sitting is prevented by the material's high breathability, and its network structure ensures water is not retained even when the entire vehicle is washed. Other reasons for adopting the material include its highly-regarded ability to be thinner than polyurethane foam, and its suitability for horizontal recycling (material recycling).

The seatback supporter is composed of an inner cushion layer (BREATHAIR™) and an outer cover layer. The interior synthetic leather material with moisture permeability PARMIA™, manufactured and sold by the Toyobo Group company Toyo Cloth Co., Ltd. (Main Office: Chuo Ward, Osaka City; President & Representative Director: Kazuhiko Katayama) is used for the cover layer.

\*1 Details are expected to be released in sequence.

\*2 ROV is an abbreviation for "Recreational Off highway Vehicle." This concept car aims to realize a lifestyle of enjoying driving while harmoniously communing with nature, going places that off-road vehicles cannot go, while enjoying good response and sounds that stimulate all five senses.

\*3 A vehicle equipped with an internal combustion engine that provides dynamic power by burning hydrogen.

### **◆Overview of BREATHAIR™**

BREATHAIR™ is a three-dimensional network structured fiber material made through three-dimensional bonding of fibers of PELPRENE™, a thermoplastic polyester-based elastomer manufactured and sold by Toyobo MC. The material is lightweight with excellent rebound, and has outstanding durability and breathability. Since its market debut in 1996, it has been used for mattresses and pillows both for home and business use, seats for railway cars like the Shinkansen, and ships, motorcycles, and baby strollers, to name just a few applications. Toyobo MC has already introduced material

recycling in the manufacturing process. R&D is currently underway, with the aim of recovering and recycling used products.



"ROV Concept" (provided by Lexus International)



Seatback supporter (photo at left) and "ROV Concept" (photo at right, provided by Lexus International)



BREATHAIR™, a three-dimensional network structured fiber material

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